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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,915	01/05/2004	Akihiko Okumura	HITA.0487	1978

7590 05/20/2005
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EXAMINER

VANORE, DAVID A

ART UNIT	PAPER NUMBER
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2881

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/750,915	Applicant(s) OKUMURA ET AL.	
	Examiner David A. Vanore	Art Unit 2881	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☒ Claim(s) 17-20 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/04</u> . | 6) <input type="checkbox"/> Other: ____. |

Claim Objections

Claim 11 is objected to because of the following informalities: Claim 11 recites at line 23 on page 32 of the application "the mass filter." There is a lack of antecedent basis for this term. Appropriate correction is required.

Claims 18 and 20 are objected to because of the following informalities: Claims 18 and 20 recite the limitation "the monitor screen". There is no antecedent basis for this term. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 7 and 9 recite the method for selecting a ion to be isolated in the ion trap of claim 1. Claims 8 and 10 require that the selected peak be displayed on a monitor screen. After considering the related disclosure, especially at paragraphs 86-89, it is the opinion of the examiner that claims 7-10 recite the method steps for selecting an ion for analysis in the apparatus of claim 1, and therefore recite a use of the apparatus of claim 1. Accordingly, the claims are rejected under 35 USC 112 second paragraph in view of the MPEP 2173.05(p). The examiner further notes that claims 17-20 are substantially similar to claims 7-10. However, claims 17-20 depend on a method and

therefore do not recite an apparatus and associated method of using the apparatus in a single claim.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 7-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 7-10, as pointed out above, recite two statutory classes of invention in a single claim. Accordingly, Claims 7-10 are rejected in accordance with MPEP 2173.05(p).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4 and 11-14 rejected under 35 U.S.C. 102(e) as being clearly anticipated by Wang et al. (USPN 6,627,883 B2).

Regarding claims 1 and 11, Wang et al. teaches a mass spectrometer and method of use where ions are generated by an ion source (151), the ions are then

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passed to a mass filtering means (169) which selects a ions of a desired mass to charge ratio (Col. 18 Lines 17-27), the selected ions then being passed to a three dimensional quadrupole ion trap (161 and Col. 17 Lines 5-36) in which ions are selectively fragmented, the fragments then being passed to Time of Flight Mass Spectrometer (163) which accelerates ion fragments (Col. 17 Lines 36-67) towards a detection means and thereby measures their time of flight. Wang et al. further teaches that the mass filter is situated in a pressure region (168) and that the ion trap is situated within a different pressure region (164) and that the pressure in region (168) is held at 4×10^{-5} mbar and that the pressure in region (164) is set to 4×10^{-3} mbar when operating in MS/MS mode (Note Col. 20 Lines 9-10 and Col. 11 Line 33).

Regarding claims 2 and 12, as pointed out above, the gas pressure in the mass filter region is lower than the gas pressure in the ion trap region.

Regarding claims 3-4 and 13-14, as pointed out above, the ions are fragmented, or dissociated, in an ion trap (161) and, Time of Flight Mass Spectrometry is used to analyze the fragments.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-6 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. as applied to claims 1, 2, 11, and 12 above, and further in view of Whitehouse et al. (USPN 5,652,427).

Wang et al. teaches all the required limitations of claims 1, 2, 11, and 12 as pointed out above, and further teaches a multi-stage mass filter comprising three independently controllable quadrupole elements (186, 185, and 188 and Col. 16 Lines 45-63).

Wang et al. fails to teach that the second stage of the mass filter has a lower pressure than the first and third stages.

Whitehouse et al. teaches a multistage quadrupole (Fig. 14) where each stage is independently pumped to control the pressure in each stage. (Note Col. 5 Lines 14-40).

Whitehouse et al. modifies the multistage mass filter of Wang et al. such that each separate region is separately pumped so that the second stage of the mass filter may be at a lower pressure than the first and third stages.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to pump each stage of the mass filter of Wang et al. separately such that the pressure in the different stages are selectable because Whitehouse et al. teaches that such a design affords better ion transport, better control of ion energy, and a smaller beam diameter (Col. 5 Lines 37-40).

Allowable Subject Matter

Claims 17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The main reason for indicating that claims 17 and 19 contain allowable subject matter is that the prior art does not teach the method of selecting an ion species for isolation in a mass analysis means. The most relevant teaching to the use of isolation resolution is USPN 5,696,376 to Doroshenko et al. At paragraph 97 of the Doroshenko et al. patent, a method for controlling isolation resolution by altering the mass scan rate is briefly discussed. There is not a discussion of selecting peaks based on the isolation resolution.

Conclusion

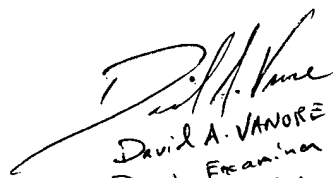
Any inquiry concerning this communication or earlier communications from the examiner should be directed to David A. Vanore whose telephone number is (571) 272-2483. The examiner can normally be reached on M-F 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Lee can be reached on (571) 272-2477. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

dav


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